

Health Concern

Obesity

The leading causes of death in Guilford County are chronic degenerative diseases, especially cancer and heart disease. These conditions also result in the highest medical costs to county residents. In 2011, residents of Guilford County incurred hospital charges of \$238,788,385 for cardiovascular disease diagnoses, out of total hospital costs of \$1,122,030,551. An important risk factor for chronic disease is overweight and obesity. Being overweight or obese increases the risk for coronary heart disease, type 2 diabetes, cancer, hypertension, stroke, and liver disease, as well as other conditions such as sleep apnea, respiratory problems, and osteoarthritis [1,3] An unhealthy diet and a lack of physical activity are both key contributors to rising obesity rates. [1,2] Consuming the proper amount of healthier foods and getting enough exercise is important in reducing the risk of obesity and chronic diseases as well as reducing the burden of health care costs. [4]

Data Highlights

- BRFSS survey estimates show a trend toward higher obesity rates in Guilford County for non-Whites compared to Other Races, higher rates for those over the age of 45 compared to those 18-44, higher rates for those with a high school education or less compared to those with at least some college, and higher rates for those with household incomes less than \$50,000 compared with those with higher incomes.
- Within Guilford County there are several disparities in physical activity, with those 45 and older more likely than younger person not to engage in leisure-time physical activity. Those with a high school education or less and those with less than a \$50,000 household income are also more likely to get less exercise.
- Females in the county tend to have higher fruit and vegetable consumption compared to males, Whites have higher consumption compared to Other Races, and those with higher household incomes have higher compared to those with lower incomes.
- 9.9% of GCS high school students are overweight compared to 12.9% of NC high school students overall.
- 2 out of 5 (41.1%) of GCS middle school students and over half (55.4%) of GCS high school students did not engage in regular physical activity.
- Gender and racial disparities exist in the percentage of GCS high school students who ate vegetables other than carrots, salad and potatoes in the previous week.

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Overweight and Obesity

- Statewide close to 30% of adults have BMI scores greater than 30, or Obese; Whites statewide are less likely to be obese than other races and lower income residents are more likely than higher income residents to be obese;
- Regionally, the highest rates of obesity are in Alamance County and the lowest are in Forsyth.
- Guilford's 2010 obesity rate of 28.3 is a slight improvement on the 2007 baseline rate of 27.2% with BMI scores greater than 30.

HEALTHY NORTH CAROLINA 2020 CROSS-CUTTING OBJECTIVES

Objective: Increase the percentage of adults who are neither overweight nor obese.

Rationale for selection: Obesity increases an individual's risk for a host of chronic diseases, including heart disease, stroke, and certain cancers. It also increases the risk for premature death. The CDC calls obesity a "national health threat" and "a major public health challenge."

NC BASELINE (2009): 34.6%

2020 TARGET: 38.1%

GUILFORD (BRFSS 2010): 36.8%

<http://publichealth.nc.gov/hnc2020/docs/HNC2020-FINAL-March-revised.pdf>

Percent of Adults with Body Mass Index Greater than 30 (Obese), By County and NC, 2010

Residence	Overall	White	Other Races	Less than \$50,000 (Less than \$15,000)	\$50,000 or more (Greater than \$75,000)
North Carolina	28.6	25.6	42.6 (Black)	36.3	22.0
Alamance	30.1	26.2	38.3	30.9	34.8
Davidson	28.0	31.3	9.8	33.9	20.8
Forsyth	25.6	20.8	38.9	24.6	24.5
Guilford	28.3	24.2	38.6	36.9	23.7
Randolph	28.8	25.6	47.9	25.6	47.9

Source: Behavioral Risk Factor Surveillance System (BRFSS), NC State Center for Health Statistics, 2010

Body Mass Index Grouping—Underweight, Recommended Range, Overweight and Obese By Sex, Race, Age, Education and Household Income, Guilford and NC, 2010

Category	Respondents	Underweight	Recommended Range	Overweight	Obese
North Carolina	11,534	1.4%	33.3%	36.7%	28.6%
Guilford County	653	1.6%	36.8%	33.2%	28.3%
Gender—Male	253	0.3%	28.0%	41.6%	30.1%
Gender—Female	400	2.8%	44.0%	26.4%	26.9%
Race—White	489	2.4%	40.3%	33.1%	24.2%
Race—Other	157	0.0%	28.2%	33.2%	38.6%
Ages 18-44	148	2.6%	42.9%	32.7%	21.8%
Ages 45+	497	0.8%	30.7%	34.3%	34.2%
High School or Less	214	0.2%	39.3%	27.0%	33.4%
Some College and More	438	2.2%	35.8%	35.6%	26.4%
Income Less than \$50,000	310	0.4%	32.1%	30.6%	36.9%
Income \$50,000 and Greater	269	2.7%	35.7%	37.9%	23.7%

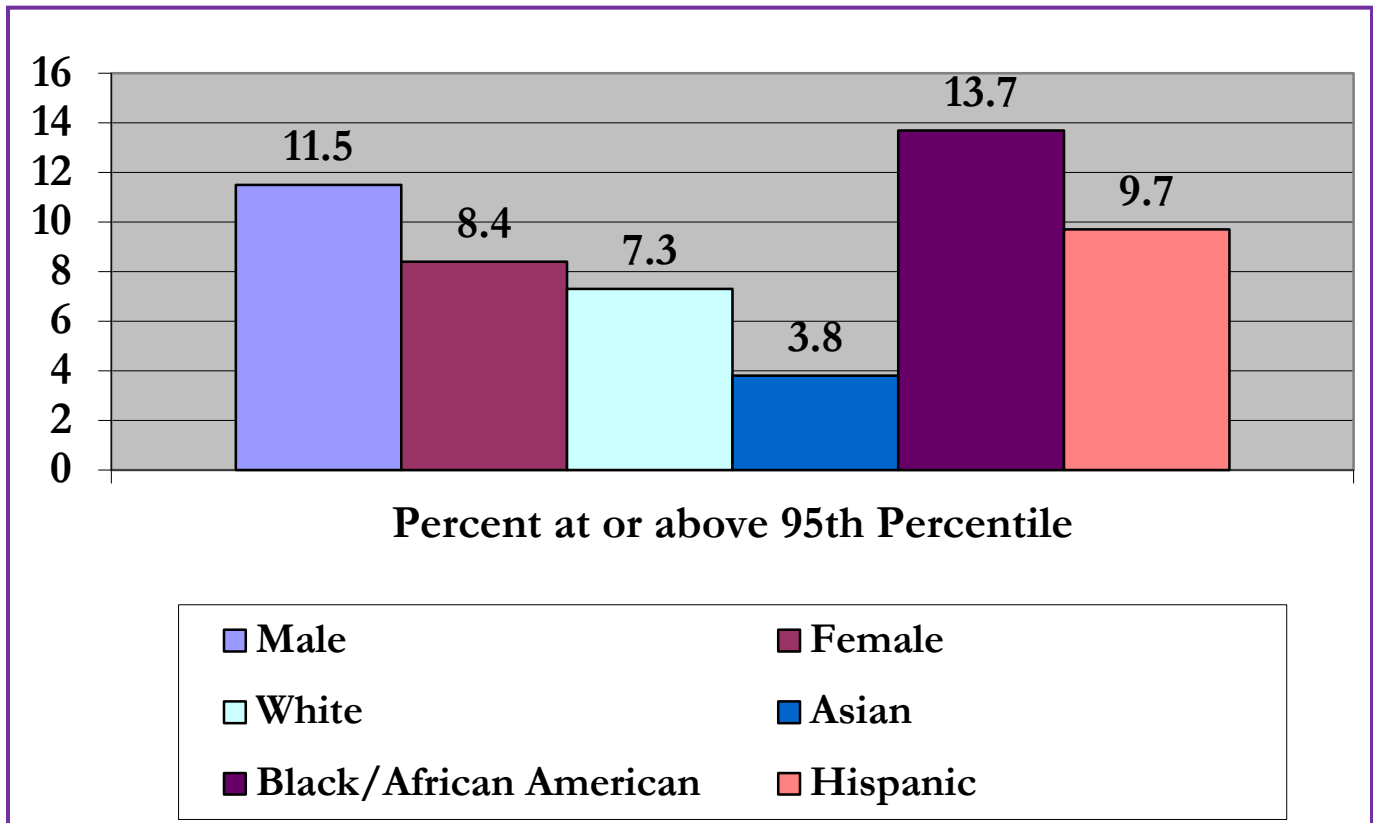
Source: Behavioral Risk Factor Surveillance System Survey (BRFSS); NC State Center for Health Statistics.

Note: Underweight = BMI less than 18.5; Recommended Range = BMI 18.5 to 24.9; Overweight = BMI 25.0 to 29.9 and Obese = BMI greater than 30.0

- At the 95% confidence interval, obesity sub-group comparisons are not statistically significant. BRFSS survey estimates show a trend toward higher obesity rates for non-Whites compared to Other Races, higher rates for those over the age of 45 compared to those 18-44, higher rates for those with a high school education or less compared to those with at least some college, and higher rates for those with household incomes less than \$50,000 compared with those with higher incomes.

Youth Overweight and Obesity

Overweight: At or Above the 95th Percentile for BMI¹, by Age and Sex²



Source: GCS Youth Risk Behavior Survey (YRBS) 2011-2012

N = 2,322

¹Body Mass Index (BMI): A measure of body fat based on a person's height and weight. BMI is computed as weight in kilograms divided by height in meters squared (Kg/m²)

²Based on reference data from the 2000 CDC Growth Charts

- 9.9% of GCS high school students are overweight compared to 12.9% of NC high school students overall.
- Males make up a higher percentage of overweight high school students (11.5%) compared to females 98.4%);
- Asian teens have the lowest percentage of overweight at 3.8%, with Whites at 7.3%, Hispanics at 9.7% and Black/African-American high school students 13.7%,

Percent of Adults with Body Mass Index Greater than 30 (Obese), Guilford Peer Counties 2010

Residence	Overall	White	Other Races	Less than \$50,000	\$50,000 or more
Cumberland	28.2	18.4	40.5	27.4	28.9
Durham	26.4	18.2	35.1	31.9	22.7
Forsyth	25.6	20.8	38.9	24.6	24.5
Guilford	28.3	24.2	38.6	36.9	23.7
Mecklenburg	26.7	22.0	33.6	38.1	23.2
Wake	24.4	20.5	29.2	27.4	22.4

Source: Behavioral Risk Factor Surveillance System (BRFSS), NC State Center for Health Statistics, 2010

- Across all peer counties, white residents have lower rates of obesity than do other races.
- Lower income residents tend to have higher rates of obesity than higher income residents across peer counties.

Physical Activity

Percent of Adults with no Leisure Time Physical Activity, by County and NC 2010
 (Percent answering “No” to question, “During the past month, other than your regular job, did you participate in any physical activities or exercise such as running, calisthenics, golf, gardening, or walking for exercise?”)

Residence	Overall	White	Other Races	Less than \$50,000	\$50,000 or more
North Carolina	25.7	24.8	30.1 (Black)	41.4 (LT \$15,000)	13.2 (GT \$75,000)
Alamance	28.6	26.6	34.6	33.1	12.5
Davidson	32.1	33.5	26.5	37.2	15.7
Forsyth	18.1	18.5	18.5	23.4	14.9
Guilford	20.7	20.3	22.2	27.9	14.1
Randolph	29.9	27.3	44.2	37.2	12.6

Source: Behavioral Risk Factor Surveillance System (BRFSS), NC State Center for Health Statistics

- Statewide about a quarter of residents do not get any leisure time physical activity;
- Statewide non-whites are more likely to say that they do not engage in leisure time physical activity and lower income residents are much more likely than higher income residents not to engage in leisure time physical activity.
- Regionally, the highest rate of physical inactivity is in Davidson County and the lowest rate of inactivity is in Forsyth, followed by Guilford.
- Guilford’s rate of 20.7% with no leisure time physical activity is little changed from the rate of 19.6% recorded in 2007 at baseline for the 2009-2012 Community Health Assessment.

Physical Activity and Exercise by Gender, Race, Age, Education and Household Income, Guilford County and NC, 2010

During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or waking for exercise?

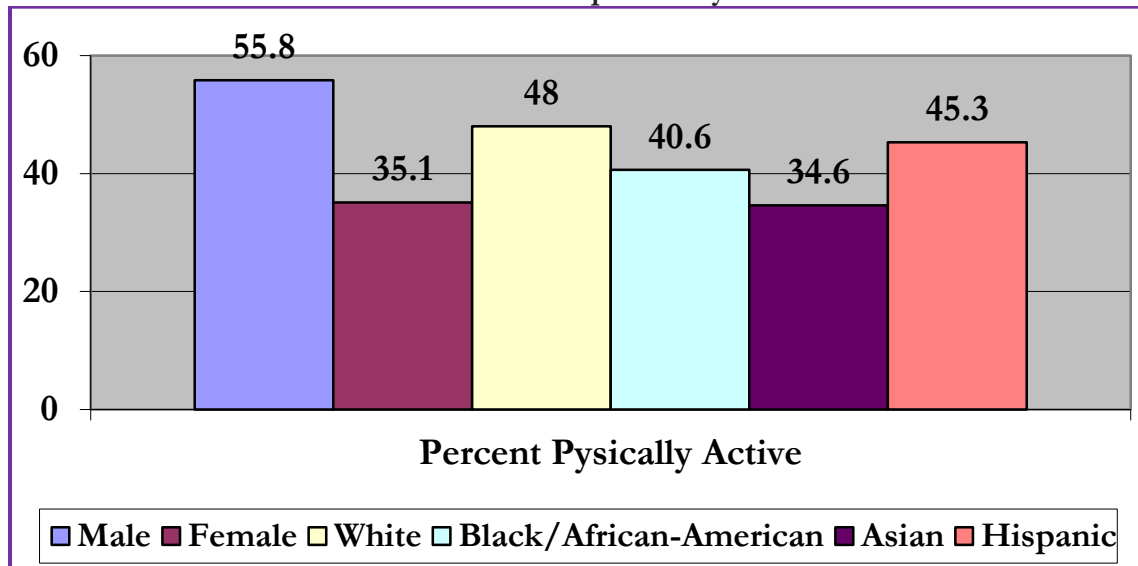
Category	Total Respondents	Yes	No
North Carolina	12,133	74.3%	25.7%
Guilford County	691	79.3%	20.7%
Gender—Male	258	84.8%	15.2%
Gender—Female	433	75.1%	24.9%
Race—White	515	79.7%	20.3%
Race—Other	169	77.8%	22.2%
Age 18-44	158	86.8%	13.2%
Age 45 and Older	523	72.9%	27.1%
High School or Less	229	60.3%	39.7%
Some College and More	461	86.7%	13.3%
Less Than \$50,000	321	72.1%	27.9%
\$50,000 and Over	281	85.9%	14.1%

Source: Behavioral Risk Factor Surveillance System Survey (BRFSS); NC Center for Health Statistics

- The percentage of persons in Guilford County with no leisure-time physical activity is lower than for the state as a whole.
- Within Guilford County there are several disparities in physical activity, with those 45 and older more likely than younger person not to engage in leisure-time physical activity. Those with a high school education or less and those with less than a \$50,000 household income are also more likely to get less exercise.

Youth Physical Activity

GCS High School Students Physically active for a total of at least 60 minutes per day on 5+ of the past 7 days



N = 2,287; Source: GCS Youth Risk Behavior Survey (YRBS), 2011-2012

- A higher percentage of GCS middle and high school students engaged in regular physical activity in 2011 compared to 2008.
- 2 out of 5 (41.1%) of GCS middle school students and over half (55.4%) of GCS high school students did not engage in regular physical activity.
- A lower percentage of GCS high school students (44.6%) than GCS middle school students (58.9%) engaged in regular physical activity.

The Physical Activity Guidelines for Americans recommend that children and adolescents between the ages of 6 and 17 years old should have 60 minutes or more of physical activity each day. This activity should include aerobic activities, muscle-strengthening activities and bone-strengthening activities.

Source: U.S. Department of Health and Human Services. (2008). Physical Activity Guidelines for Americans. Washington, DC: U.S. Department of Health and Human Services. Available at: health.gov/paguidelines/chapter3.aspx.

Percent of Adults with no Leisure Time Physical Activity, by County and NC 2010
(Percent answering “No” to question, “During the past month, other than your regular job, did you participate in any physical activities or exercise such as running, calisthenics, golf, gardening, or walking for exercise?)

Residence	Overall	White	Other Races	Less than \$50,000	\$50,000 or more
Cumberland	36.2	35.5	38.1	45.6	18.9
Durham	20.1	14.8	25.7	35.3	8.5
Forsyth	18.1	18.5	18.5	23.4	14.9
Guilford	20.7	20.3	22.2	27.9	14.1
Mecklenburg	19.9	15.0	25.6	32.7	12.3
Wake	17.1	15.3	18.2	24.0	14.3

Source: Behavioral Risk Factor Surveillance System (BRFSS), NC State Center for Health Statistics

Diet and Nutrition

Fruit and Vegetable Consumption Consumed five or more servings of fruits or vegetables per day By Gender, Race, Age, Education and Household Income, Guilford County and NC, 2009

Category	Total Respondents	No	Yes
North Carolina	12,867	79.4	20.6
Guilford County	412	79.2	20.8
Gender—Male	165	81.8	18.2
Gender—Female	247	75.9	24.1
Race—White	294	73.8	26.2
Race—Other	112	86.5	13.5
Age 18-44	93	79.1	20.9
Age 45 and Over	314	79.1	20.9
High School or Less	147	81.4	18.6
Some College and More	265	77.8	22.2
Less than \$50,000	199	83.9	16.1
\$50,000 and Greater	160	72.6	27.4

Source: Behavioral Risk Factor Surveillance System Survey (BRFSS); NC State Center for Health Statistics

- BRFSS survey estimates for sub-group comparisons for consumption of five or more servings of fruits or vegetables each day were not statistically significant at the 95% confidence level, but a trend was seen for higher fruit and vegetable consumption among females compared to males, for Whites compared to Other Races, and for those with higher household incomes compared to those with lower incomes.
- Guilford's rate of 20.8% of adults consuming five or more servings of fruits and vegetables per day represents a decline from the rate of 25.6% recorded at baseline in 2007 (BRFSS).

HEALTHY NORTH CAROLINA 2020 PHYSICAL ACTIVITY AND NUTRITION

Objective: Increase the percentage of adults who consume five or more servings of fruits and vegetables per day.

Rationale for selection: Good nutrition is essential to good health and healthy weight. Fruits and vegetables are nutritious foods that have been shown to guard against many chronic diseases, including cardiovascular disease, type 2 diabetes, and some cancers.

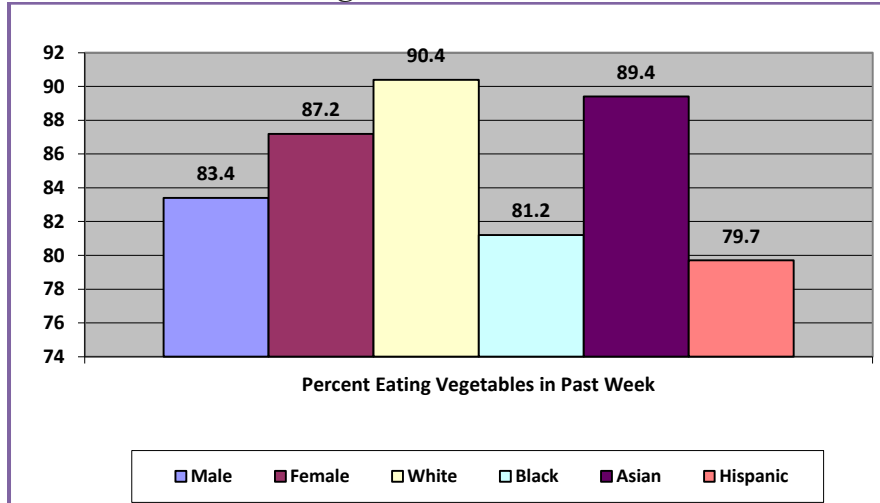
NC BASELINE (2009): 20.6%

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<http://publichealth.nc.gov/hnc2020/docs/HNC2020-FINAL-March-revised.pdf>

**Ate Vegetables (Not counting carrots, green salad, or potatoes) 1+ times during the past 7 days
GCS High School Students, 2011**



Source: GCS Youth Risk Behavior Survey (YRBS), 2011-2012

- The majority of GCS high school students ate vegetables (not including salads, carrots or potatoes) during the previous week.
- About the same percentage of GCS high school students as NC high school students overall ate other vegetables during the previous week.
- Females have a higher percentage than do males of eating vegetables in the past week. A higher percentage of Whites (90.4%) compared to other races (African-Americans 81.2% and Asians 89.4%) ate vegetables, with Hispanics having the lowest percentage at 79.7%.

Highlights from Focus Groups

- There is a continued need to encourage mothers to breast-feed or give breast milk to their babies.
- Participants noted that there were not many safe places to walk or exercise within or near their communities.
- Participants were also less likely exercise outside of their neighborhoods due to transportation barriers.

References:

- [1] Centers for Disease Control and Prevention. Overweight and obesity: Causes and consequences. Centers for Disease Control and Prevention Web Site. Updated April 27, 2012. Accessed February 27, 2013.
- [2] Hensrud DD. Diet and obesity. Current Opin Gastroentero. 2004;20:119-124.
- [3] Mokdad AH, Ford ES, Bowman BA, et al. Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. JAMA, 2003;289:76-79
- [4] Rosenberger RS, Sneh Y, Phipps TT, Gurvitch R. A spatial analysis of linkages between health care expenditures, physical inactivity, obesity and recreation supply. Journal of Leisure Research, 2005; 37.2:216-235.

A Spanish-speaking resident expressed the need for language-specific nutrition classes. Spanish-speaking mothers stated that they give their kids whatever they want to eat because that was how they had been raised. They realized that their kids may not be eating healthy but do not necessarily know how to prepare healthy meals and snacks for them.

- A need expressed by focus group participant